

UNITED STATES PUBLIC HEALTH SERVICE

INDOOR TROPICS
THE INJURIOUS EFFECT OF OVERHEATED
DWELLINGS, SCHOOLS, ETC.

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INDOOR TROPICS.

THE INJURIOUS EFFECT OF OVERHEATED DWELLINGS, SCHOOLS, ETC.

By J. M. EAGER, Surgeon, United State Public Health Service.

Do you live in the Tropics? You do if you maintain equatorial conditions indoors. It is true you do not risk contracting yellow fever or malaria in hot rooms, but other dangers lurk in overheated houses. It is not only tropical diseases that make torrid countries undesirable. High temperatures are debilitating and reduce one's resistance to diseases as dangerous as those of the dreaded maladies of the Tropics. Indigenous diseases—tuberculosis for example—are less frightful to us than exotic diseases. But yellow fever is a mild enemy of the human race compared with tuberculosis.

Climate is of immense importance in the preservation of health. Health seekers chase good climate from Canada to the West Indies, from North Cape to North Africa. But it is not the sultry summer heat they pursue so ardently. Temperately cool weather is the ideal sort for maintaining health. Modern heating and ventilating systems have made it possible to regulate atmospheric conditions within doors, so as to have a choice of climate during the many hours spent inside the house.

A moderate degree of indoor heat must not be regarded with disfavor. From inordinate heat the harm comes. Blessings become curses by their abuse. An ideal kitchen is a most desirable thing for the dietary. Gluttony is its abuse. Similarly, by the misuse of a perfect system of controlling house temperature, a harmful fondness is acquired for excessive heat—the vice of heat gluttony.

To benefit by modern heating facilities one must first establish a standard of good climate and try to copy it indoors. The weather imitated should be the agreeable, exhilarating weather of mid-autumn—the best climatic feature of our country—rather than the depressing summer heat of many parts of the United States. With intelligent control of indoor weather a good climate should not be difficult to secure within the house. Temperature is not everything in establishing suitable indoor weather. The proper degree of humidity and a constant renewal and moderate movement of the air are factors not to be neglected. But even with all conditions rightly adjusted, too high a temperature makes the house an unhealthy dwelling place.

The temperature of living apartments, places of business, churches, schools, theaters, railroad coaches, and other public and private places of sojourn should never be allowed to rise above 70 degrees Fahrenheit. This is high enough even in hospitals, except where heat is used as a remedial agent, as in Turkish baths, or in the case of incubators for infants who have come into the cold world before the usual time. A temperature higher than 70 in a schoolroom is worse than illiteracy. What sensible person would think of sending children to the Tropics for their schooling? Many parents inadvertently do so. Schoolrooms are often kept at 80 degrees, and 85 is not unusual. Long hours spent in such overheated atmosphere render children unable to stand exposure to "colds" and catarrhal affections.

Personal preferences for hot rooms, especially the preferences of chilly teachers, should, in the general interest, be disregarded. Often a teacher with good sanitary sense and a conscientious desire to rectify matters is hampered by the fact that children accustomed to a home temperature of 80 degrees or higher find a school temperature of 70 degrees uncomfortable, and are supported in their protests by unwise parents. Windows must be opened notwithstanding the protests of the salamander. To cause the shiverers discomfort may seem selfish, but it is part of the larger selfishness.

In establishing a temperature not to be exceeded indoors the comfortable point should not be taken as the standard. The comfortable point varies with the individual and has relation to the accustomed temperature—moderate, too high, or too low. A person habitually living in a temperature of 80 degrees feels chilly at 70 degrees; habituated to 70, he scarcely finds 65 uncomfortable. The young and those accustomed to being much in the open suffer greatly from hot rooms. Robust men properly fed and accustomed to an active outdoor life are not uncomfortable at a house temperature of 60. The comfortable point with them would be too low for the common living room.

The taste in temperatures of persons living constantly outdoors in a cold climate should no more be taken as a standard than should the preferences of chilly persons whose reaction to moderately healthful temperatures has been lowered by living in overheated rooms.

The elderly and the sick should be protected against depressed temperatures. Their necessities, however, rather than their preferences should be considered in this matter, thus avoiding damage by indulgence. Aged and invalid persons often crave high temperatures because they have become inured to an environment harmful to them. The sympathy their condition excites often stifles the wise protests of better judges of temperature, and the well are allowed

to suffer with the sick, and this notwithstanding that many diseases are benefited by a moderately low temperature.

Light-weight garments, such as many women adopt, are no solution to the problem. It is true that gauzy clothing makes hot rooms temporarily more tolerable, but the ultimate physical and mental enervation and consequent damage to health are not averted. The constant breathing of overheated air is even more injurious than its contact with the body. This principle explains the good that certain sick persons receive from sleeping in an open window even with the body wrapped in many thicknesses of blankets. On the same basis rest the benefits of cool, fresh air, conferred by an outing in an automobile, the body buried in furs, the face alone exposed to the cold air.

Higher temperatures than those approved for the house are well endured outdoors in summer. This fact does not justify, however, a high indoor temperature. The constant renewal and movement of air indoors at such temperatures is difficult to maintain. In fact, the occasional unfavorable health showing of the bracing autumn and winter seasons when compared with "the good old summertime" depends very often on the failure of attempts to imitate hot summer weather.

Health is affected by indoor as well as outdoor conditions. Certain states of the air stimulate, others depress the system, with resultant effects, permanent if long continued. Robust persons unaccustomed to overheated rooms, and healthy young people whose pleasures take them into the open in wintry weather object to hot apartments, because, like northerners newly arrived in the Tropics, they have not yet conformed themselves to the unhealthful surroundings—have not become acclimated to a bad situation. The acclimation involves not a triumph over environment, but a concession to it. It often goes hand in hand with an enfeeblement of health. One is better fitted by the process to endure the discomforts of a bad climate, but worse fitted for a good climate. So, what is tolerable, because unavoidable in the Tropics, is a disadvantage in a good climate.

Moderate temperatures, slightly inclined to coolness, promote mental and bodily activity and increased resistance to infectious disease. High temperatures induce bodily lassitude and mental dullness, with corresponding depression of health and resultant loss of appetite and low spirits. The antidote is sometimes sought in stimulating food and drink, with a sad train of troubles, such as dyspepsia and alcoholism. So, one sort of intemperance is added to another—excess in drink to excess in heat.

Much study has been given by statisticians to the dismal questions of crime and the weather, suicide and the weather, insanity and the

weather. Hot weather is under indictment for increasing these woes of humanity. There is no excuse for having such bad weather indoors. The open window is the simple remedy. It is hard on lace curtains, to be sure; but it is better to be known in the neighborhood as "soiled-curtain people" and have indoor freshness advertised by lace streamers flapping from yawning windows than to maintain a noxious indoor climate with curtains as white as snow. With open windows there is likely to be considerable movement of the volume of air. Currents of air not amounting to pernicious drafts are beneficial. Without some movement of the atmosphere one remains surrounded by an envelope of vitiated air containing all the offensive moisture and harmful effluvia coming from the body. Thus, in the absence of any current of air, one has the worst atmosphere right in his immediate neighborhood, and his environment greatly resembles that of an unfortunate goldfish floating in the unrenowned water of a neglected globe.

Much of the misunderstanding about house temperature arises from false ideas of the origin of certain diseases, among which are colds. Cold, even excessive cold and long exposure to cold, rarely causes diseases that begin with a chill. The chill is not the result of a lowering of the body temperature. On the contrary, during a chill the temperature of the body, as shown by the clinical thermometer, is usually raised. As for "catching cold," persons who begin to snuffle and cough after exposure to low temperatures, even during severe winter weather, are generally those whose resistance has been reduced by living under the depressing influence of high indoor temperatures. Cool air, that should be a stimulant to them, becomes, in their reduced condition, a shock, and, before they can rally, infection seizes upon them.

Good weather indoors, like good weather outdoors, must be somewhat variable weather. The theory that strictly uniform temperatures are beneficial is a false one. The exercise given the circulatory system by varying temperatures is healthful. The thermostat, a useful servant, should never become a household god. The temperature variations of day and night, of summer and winter, are healthful, and should be imitated in arranging indoor temperatures. The temperature of houses in winter should not be as high as maximum outdoor summer temperatures. Sleeping rooms should have a lower temperature at night than living rooms in daytime, thus following the natural outdoor day and night variation.

Severe sickness, or death, from exposure to a cool, but not cold, indoor temperature is unknown. Sometimes persons who have weakened their resistance by living in hot rooms suffer discomfort when a rational temperature is restored. On the other hand, much ill health, with increased susceptibility to fatal illness, is the result of

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overheated living apartments. An estimate in dollars and cents of the penalty paid for the harmful luxury of overheated houses is not easily made. The loss of working efficiency through feeble health must be enormous. The unnecessary expenditure for fuel has a material effect on the cost of living.

The way to cultivate a taste for cool rooms and to break away from slavery to high temperatures is to learn to appreciate the benefits of cold weather. Walks and outdoor exercise when the air is fresh and crisp create a preference for healthful coolness indoors. For persons engaged in sedentary employment vacations devoted to active outings, the period chosen being autumn or winter, are preferable to holidays of rest and indolence indulged in during the hot days of summer. This practice is a helpful factor in acquiring a salutary taste in temperatures.

The two weighty factors in the causation of disease are individual predisposition and direct exciting causes. There is a growing public appreciation of intelligent sanitary battling against exciting causes, such as disease-producing germs. The factor of predisposition is equally important. Among the many measures of personal hygiene that serve to fortify health and arm the body against disease, whether of germ or other origin, none is more important than the avoidance of overheated rooms—the suppression of indoor tropics.

[NOTE.—One of the factors to be considered in the heating of a dwelling during cold weather is the amount of moisture contained in the air. This factor is perhaps as important as the temperature in determining the effects of such heating and the resulting comfort to the occupants. Cold air will not hold as much moisture as warm air, and when air becomes cold, therefore, it usually loses part of its moisture. The result is that during the winter we take air that has but a small amount of moisture, and by heating this air cause a change in it which is similar in its effect to a reduction in the amount of moisture. As cooling air reduces the amount of moisture it can contain, heating air has the opposite effect and increases the amount of moisture the air will take up. When we take winter air, therefore, and heat it for our dwellings the dryness of the air is increased unless moisture is added.

This dryness of the air causes irritation of the mucous membrane of the nose and throat and makes those breathing it more susceptible to colds. It will be found also that the dry air heated to 72°, 74°, or even 80° Fahrenheit will be less comfortable and will appear more chilly than a temperature of 66° or 68° when there is a greater degree of moisture in the air of the room. In a

room in which the air is overheated and overdry the least movement of the air gives the sensation of drafts. If the moisture is increased and the temperature lowered the air will give the impression of balminess and the movements of the air, unless of considerable force, will cease to be noticed as drafts.—Editor.]

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